

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | | |
|---|---|---|-----------------------|
| Applicant's or agent's file reference 42 043...sev | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/EP2004/006505 | International filing date (day/month/year) 17.06.2004 | Priority date (day/month/year) 03.07.2003 | |
| International Patent Classification (IPC) or national classification and IPC B21B1/46 | | | |
| Applicant SMS DEMAG AKTIENGESELLSCHAFT | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------------------|---|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|-------------------------------------|--------------|---|
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>11</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/> | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|-----------------------------------|
| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006505

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:

international search (Rule 12.3 and 23.1(b))
 publication of the international application (Rule 12.4)
 international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:

pages _____ as originally filed/furnished
 pages* 1-7 received by this Authority on 18.04.2005 with letter of 15.04.2005

pages* _____ received by this Authority on _____

the claims:

nos. _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19 18.04.2005 with letter
 nos.* 1-7 received by this Authority on of 15.04.2005
 nos.* _____ received by this Authority on _____

the drawings:

sheets _____ as originally filed/furnished
 sheets* 1/2-2/2 received by this Authority on 18.04.2005 with letter of 15.04.2005
 sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/006505Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|-------------------------------|--------|-----|-----|
| Novelty (N) | Claims | 1-7 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-7 | NO |
| Industrial applicability (IA) | Claims | 1-7 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: DE 32 41 745 A (MANNESMANN AG) 17 May 1984 (1984-05- 17).

1. Independent **claim 1**:

1.1 Document **D1** discloses a:

device (figure 3) for producing hot-rolled steel strip, comprising at least one continuous casting machine, at least one set of shears (2), a soaking furnace (4, 6, 8), a descaler (13), possibly a blooming train (12), a finishing train (8) (multiple-stand rolling mill (page 8, paragraph 4) or Steckel mill (page 8, paragraph 4)), a roller table (page 11, last paragraph) having a cooling zone and at least one coiler (9) for the hot-rolled strip, wherein the casting line (1) and the rolling line are arranged parallel or substantially parallel to each other in such a way that the direction of casting and the direction of rolling extend in essentially opposite directions

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006505

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

(figure 3) and are connected by a heating furnace (4).

The subject matter of **claim 1** therefore differs from document **D1** in that:

(i) the heating furnace is an elevator hearth furnace or a walking beam furnace.

The subject matter of **claim 1** is therefore novel (PCT Article 33(3)).

1.2 **Claim 1** is not inventive (PCT Article 33(3)):

Document **D1** (page 8, paragraph 2) discloses the use of a rotary hearth furnace. Depending on conditions, a person skilled in the art would use an elevator hearth furnace or a walking beam furnace instead of the rotary hearth furnace in order to be able to heat not only coils but also slabs in the furnace, without thereby exercising inventive skill.

2. Dependent **claims 2 to 7**:

Dependent **claims 2 to 7** contain no features which, combined with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step. The reasons are as follows:

2.1 **Claim 2:** document **D1** (page 10, paragraphs 2 to 3) discloses that the distance

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006505

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

between the casting line and the rolling line is designed in such a way that an adequate dwell time and buffer time is ensured for the coils in the heating furnace.

2.2 **Claim 3:** document D1 (page 8, paragraph 2) discloses that the heating furnace (4) can accommodate a plurality of coils. Configuring the furnace as an elevator hearth furnace or a walking beam furnace for 3 to 12 slabs, depending on the prevailing conditions, is at least obvious to a person skilled in the art proceeding from document D1.

2.3 **Claim 4:** document D1 discloses that the casting line consists of one or more casting machines or a plurality of casting sections (figure 4, bottom).

2.4 **Claim 5:** the definition of the levels is unclear (PCT Article 6). Insofar as the claim is understood correctly, document D1 (figures 1 and 3) discloses that the casting and the rolling levels are preferably on the same height.

2.5 **Claim 6:** disposing a continuous furnace between the casting machine and the

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006505

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

heating furnace does not have a further or unforeseeable technical effect.

2.6 **Claim 7:** document **D1** discloses that a reel furnace (6) is disposed between the rolling mill (8) and the heating furnace (4). The continuous furnace according to the claim does not have a further or unforeseeable technical effect.

3. The subject matter of **claims 1 to 7** is clearly industrially applicable (PCT Article 33(4)).

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006505

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. The back-references of dependent claims **5 to 7** are unclear (PCT Article 6) for the following reasons. Owing to the use of "according to one or more of claims 1 to ..." and "one or more of the preceding claims ..." the claimed scope of protection is unclear and/or inconsistent.